

Part 1: Working with Punnett Squares

The trait for being able to roll your tongue is dominant, while the trait of not being able to roll your tongue is recessive. This means that someone who can't roll his tongue would have to carry both parents' genes for that exact same trait. Because the gene for rolling the tongue is dominant, a person would only need one (instead of both) to exhibit this trait. Imagine that Clara Williams is unable to roll her tongue, and so her genotype for this trait would be "bb." She marries Robert Jones, who can roll his tongue. His genotype for this trait happens to be "Bb."

1. Fill out the Punnett square at right to show all possible combinations of genes for their offspring:

2. Clara and Robert have two children, Susan and Peter. Susan can't roll her tongue, while Peter can.

What is Peter's genotype for his tongue-rolling ability? _____

What is Susan's genotype for this same trait? _____

3. Later, Susan marries someone who can roll his tongue. Using your answer to question 2, complete these Punnett squares to include all possible combinations of genes for this trait for their offspring.

	Clara Williams	
	b	b
Robert Jones	b	
	B	

4. Peter marries someone who cannot roll her tongue. Complete these Punnett squares to project what their children's genotypes for this trait might be.

	Susan Jones	
Susan's husband		

	Susan Jones	
Susan's husband		

5. Why is it necessary to fill out two different Punnett squares for Peter and Susan?

	Peter Jones	
Peter's wife		

	Peter Jones	
Peter's wife		